ETHERNET SWITCH

RocketLinx® ES8508F-S-XT

Part Number: 32011-1 (Single-Mode)

RocketLinx® ES8508F-M-XT

Part Number: 32012-8 (Multi-Mode)

KEY FEATURES AND BENEFITS::

- Six 10/100BASE-TX and two SC fiber ports (2KM or 30KM)
- EN50121-4 EMC and IEC 61373 vibration standards for railway applications
- Advanced Layer 2 features including: VLAN, Private VLAN, QinQ, GVRP, QoS, IGMP Snooping V1/V2/V3, rate control, port trunking, LACP, and online multiport mirroring
- 32Gbps non-blocking, 8K MAC address table
- RSTP, MSTP and redundant ring support with sub 5ms ring recovery
- Management via Web, PortVision® DX, SNMP, Telnet, and Serial Console
- Modbus TCP/IP support for participation on industrial Ethernet networks
- Hardware watchdog timer for system reset and recovery
- Configurable multi-event alarm output
- IP31 rated rugged aluminum housing with DIN rail mounting
- Dual 10-60VDC redundant power inputs
- Wide operating temperature (-40° to 75°C)
- IPv6 support
- RoHS2 compliance under CE
- NEMA TS2 certified

PRODUCT DESCRIPTION::

The RocketLinx ES8508F-XT is an industrial-grade managed 8-port switch with built-in fiber ports that features advanced Layer 2 management, security, and system reliability for deployment in extreme and mission critical networking applications.

The ES8508F-XT design incorporates the latest managed switch technologies to ensure reliable, high-bandwidth data communications including a 32Gbps switch fabric for real-time non-blocking data transmission, redundant network topology supporting ring, RSTP and MSTP, and a high performance ARM9 processor with an embedded hardware watchdog timer. These features combined with a rugged IP-31 grade housing and extended operating temperature guarantee performance and stability for traffic, rail, and other demanding applications.

RAIL CERTIFIED

NEMA TS2

PORTVISION DX MANAGEMENT SOFTWARE

ROCKETLINX SPECIFICATIONS ::

HARDWARE

Network Interface
10/100BASE-TX,100BASE-FX Single and Multi-Mode

Connector Type	RJ45 Duplex SC

Enclosure
IP31 grade aluminum metal case
Drop-waterproof and dustproof

Installation Method	DIN rail

LED Indicators
Power 1, power 2, system status ring, digital input, digital output RJ45 link/activity

Digital Input (DI)
One DI, 4-pin screw terminal block

Digital Output (DO)
One DO (dry relay output), 4-pin screw terminal block

Serial Console Port
One RJ45 RS-232 (TXD, RXD, signal GND), baud rate: 9600bps, data bits: 8, parity: none, stop bits: 1, flow control: none

Dimensions	5.2" x 5.9" x 2.15" 132 x 150 x 55 mm
Product Weight	2 lbs .91 kg

ETHERNET SPECIFICATIONS

Number of Ports
6 – 10/100BASE-TX
2 – 100BASE-FX (Single and Multi-Mode)

RJ45 (Standard)
10/100BASE-TX, auto MDI/MDIX, auto-negotiation (speed/duplex mode)

Cable Types
Cat 3, Cat 4, Cat 5, Cat 5e (UTP or STP)

Optical Fiber

Fiber Cable Type (Single-Mode)	8-10/125um
Fiber Cable Type (Multi-Mode)	50-62.5/125um
Wavelength	1310nm
Transmit Power (Min)	-15dBm (Single-Mode) -20dBm (Multi-Mode)
Transmit Power (Max)	-8dBm (Single-Mode) -14dBm (Multi-Mode)
Receive Sensitivity (Min)	-34dBm (Single-Mode) -31dBm (Multi-Mode)
Receive Sensitivity (Max)	0dBm
Link Budget	19dB (Single-Mode) 11dB (Multi-Mode)

Link Distance

RJ45	100 meters
Fiber	30KM (Single-Mode) 2KM (Multi-Mode)

Port Alarm Relay	Yes

Standards
IEEE802.1AB: Link Layer Discovery Protocol (LLDP)
IEEE802.1D-2004: Rapid Spanning Tree Protocol (RSTP)
IEEE802.1p: Class of Service
IEEE802.1Q VLAN Tagging and GVRP
IEEE802.1s: Multiple Spanning Tree Protocol (MSTP)
IEEE802.1x: Port Based Network Access Control
IEEE802.3:10BASE-T
IEEE802.3ad: Link Aggregation Control Protocol (LACP)
IEEE802.3u:100BASE-TX
IEEE802.3x: Flow Control and Back-Pressure
IEEE1588: Precision Time Protocol (PTP)

Internet Protocol
IPv4 and IPv6

MANAGEMENT FEATURES

Configuration Management
NetVision
Out-band management: console port with command line interface (CLI) - similar to Cisco CLI, in-band management: web interface (HTTP/HTTPS) or a telnet/SSH console with CLI

Embedded Watchdog
Embedded hardware watchdog timer automatically resets system if switch system failure occurs

System Upgrade/Backup
Provides TFTP/web interface for firmware upgrade and configuration backup/restore

SNMP
V1, V2c, V3 with SNMP trap function, up to four trap stations

SNMP MIB
MIB-II, bridge MIB, VLAN MIB, IGMP MIB, ethernet-like MIB, control private MIB, and RMON

Email Warning
Automatic warning, up to four accounts by pre-defined events

System Log
Supports both local mode and server mode

DHCP
DHCP client, DHCP server with IP and MAC address binding and DHCP agent (option 82)

NETWORK PERFORMANCE

Back-Pressure
IEEE 802.3x 10/100Mbps half-duplex only

Class of Service (CoS)
IEEE 802.1p 4 priority queues/port

Flow Control Pause Frame
IEEE 802.3x 10/100Mbps full-duplex

IGMP Snooping
V1/V2 /V3 for multicast filtering and IGMP query V1/V2; supports unknown multicasting, processes forwarding policies: drop, flooding and forward to router port, 256 IGMP multicast groups

IP Security
Assign authorized IP addresses to specific port, 10 max/port

Time Synchronization
Supports IEEE 1588 (precision time protocol), NTP protocol with daylight saving function, and localized time sync function

Port Configuration
Port link speed, link node, port status, enable/disable

Port Mirroring
Online traffic monitoring on multiple selected ports

Port Security
Assign authorized MAC addresses to apecific aort, 10 max/port

Port Trunk
IEEE 802.3ad LACP with timer and static port trunk; Trunk member up to 4 ports and maximum 4 trunk groups

Port-Based Network Access Control
IEEE 802.1x, supports user authentication by the RADIUS account, password and key for the RADIUS servers (primary and secondary)

Private VLAN
Direct client ports in isolated/community VLAN to promiscuous port in primary VLAN

Rate Control
Ingress filtering for broadcast, multicast, unknown DA or all packets. Egress filtering for all packet types

Switch Technology
32Gbps switch fabric, store/forward switch technology, 8K MAC address

System Throughput
26 mega packets/second, 64 byte packet size, 14,880pps (10Mbps); 148,800pps (100Mbps)

Transfer Packet Size
64 bytes to 1522 bytes (includes 1522 bytes VLAN tag)

Packet Buffer
1MBits shared memory

Traffic Prioritization (QoS)
Supports 4 physical queues, weighted round robin queuing (WRR 8:4:2:1) and strict priority scheme, which follows 802.1p COS tag and IPv4 ToS/ diffserv information to prioritize industrial network traffic

VLAN
IEEE 802.1Q tag VLAN with 256 (Max) VLAN entries and 2K GVRP entries; 3 VLAN link modes: trunk, hybrid, and link access

Modbus TCP/IP
Supports Modbus TCP/IP communications with function code 4 for factory automation through the CLI, operates as slave/server device, while a typical master/client device is a host computer running appropriate through Ethernet, thus the Modbus TCP/IP master can read or write to the Modbus registers provided by the Modbus TCP/IP. Application software (SCADA / HMI System)

NETWORK REDUNDANCY

Rapid Spanning Tree Protocol
IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP) Compatible with legacy STP and IEEE 802.1

Multiple Spanning Tree Protocol
IEEE 802.1s MSTP, each MSTP instance can include one or more VLANS and supports multiple RSTP deployed in a VLAN or multiple VLANs

Redundant Ring Technology
Failure Recovery within 5ms
Rapid Dual Homing: Multiple Uplink Paths to Upper Switches
Ring Trunking: Integrates Port Aggregate Function in Ring Path to Get Higher Throughput Ring Architecture
Multiple Ring: Couple or Multiples of Up to 16 Rapid Super Rings, Supports Up to 4 Fast Ethernet Rings/Switch

ELECTRICAL SPECIFICATIONS

Device

DC Input Voltage (Positive or Negative)	10 – 60VDC
Current Consumption (24VDC)	625mA
Power Consumption (Max)	15W
Number of Power Connectors	2
Power Connector Type	4-Pin Screw Terminal Block
Power Input Redundancy	Dual Redundant Inputs
Reverse Polarity Protection	Yes
Digital Input	1 with Photo Optical Isolation
Logic Low (0)	0 to 10VDC
Logic High (1)	11 to 30VDC
Digital Output (Relay Output)	1
DC Input Voltage	24VDC
Current Consumption (24VDC)	1A Maximum

Multi-Event Relay Feature
Power, Port Link, DI/Ring Status Change, Ping Reset, or Perform Routing Relay On/Off Function

ENVIRONMENTAL SPECIFICATIONS

Air Temperature	
System On	-40° to 75°C
System Off	-40° to 75°C
Operating Humidity	
(Non-condensing)	5% to 95%
MTBF	
(Mean Time Between Failures)	75.4 years

EXPORT INFORMATION

Packaged Shipping Weight	2.9 lbs 1.32 kg
Package Dimensions	10" x 8.4" x 4.2" 254 x 213 x 107 mm
UPC Code	
Single-Mode	7-56727-32011-1
Multi-Mode	7-56727-32012-8
ECCN	5A991
Schedule B Number	8517.62.0050

REGULATORY STANDARDS

Emission
Canadian EMC Requirements
ICES-003
European Standard EN55022
CISPR 22
FCC Part 15 Subpart B
Class A Limit
Heavy Industrial
IEC 1000-6-4/EN61000-4-9: Pulse Magnetic Field

Immunity
Heavy Industrial IEC/EN 61000-6-2:
IEC 1000-4-2/EN61000-4-2: ESD
IEC 1000-4-3/EN61000-4-3: RF
IEC 1000-4-4/EN61000-4-4: Fast Transient/ Burst
IEC 1000-4-5/EN61000-4-5: Surge
IEC 1000-4-6/EN61000-4-6: Conducted Disturbance
IEC 1000-4-8/EN61000-4-8: Magnetic Field

Railway EMC
EN 50121-4: Signaling and Telecommunications Apparatus
EN 50121-1: Rolling Stock. Train and Complete Vehicle

Hi-Pot
AC 1.5KV for all ports and power

Other Regulatory Approvals
Traffic NEMA TS2 Certified
Railway Vibration/Shock:
IEC 61373
Free Fall with Package:
IEC 60068-2-32
RoHS2 compliant

CE FC

Warranty Information
Comtrol offers a 30-day satisfaction guarantee and 5-year limited warranty.

Sales Support
+1.763.957.6000
sales@comtrol.com

Technical Support
+1.763.957.6000
www.comtrol.com/support

Email, FTP, and Web Support
info@comtrol.com
ftp.comtrol.com
www.comtrol.com

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